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SCIENCE

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THE PROVISION MADE BY MATHE- MATICS FOR THE NEEDS OF SCIENCE¹

MATHEMATICS beyond the merest ele-
ments has been regarded by some as an
excrecent malady of the human spirit,
generated like the pearl in an abnormal and
morbid way and representing a non-living
embedment in the active tissue of the or-
ganism of society; by others it has been
supposed to exhibit the highest intellectual
reach of mankind, being in itself the most
powerful tool yet devised for the interpre-
tation of natural phenomena, while at the
same time it affords a satisfying expres-
sion of the furthestmost esthetic attainment.
On the one hand, it is considered a piece of
jugglery in which it is the joy of the pro-
ficient to produce more and more compli-
cated entanglements to astonish the be-
holder and overwhelm him with the sense
of mystery; on the other hand, it is seen to
be the systematic unfolding of remarkable
and important properties of a highly fasci-
nating creation or construction of the hu-
man spirit by means of which it has at
once its most intellectual delight and the
best means of understanding its environ-
ment. Some workers seem to resent the
interference of mathematics with their com-
fort in the conclusions of descriptive sci-
ence and its demands that observation shall
be reduced to measurable elements and the
laws of nature be expressed in mathemat-
ical formulas; other thinkers believe that
natural science is real science only in so
far as it is mathematical, that it is only
through mathematics that true science can

¹ An address delivered before the Illinois Chap-
ter of Sigma Xi on January 17, 1917.